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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/869,321	10/18/2001	Yanling Zhou	211598US2	1536

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EXAMINER

PAIK, SANG YEOP

ART UNIT	PAPER NUMBER
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3742

DATE MAILED: 05/04/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/869,321

Applicant(s)

ZHOU, YANLING

Examiner

Sang Y Paik

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 February 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,6,7,11,14,18-22,24,30-34,36 and 37 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,6,7,11,14,18-22,24,30-34,36 and 37 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Double Patenting

1. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

2. Claims 31-34, 36 and 37 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 9-12 and 18 of copending Application No. 10/842,482. Although the conflicting claims are not identical, they are not patentably distinct from each other because the claims of the copending application include the recited elements of this application including the ceramic heater with the disc-form ceramic substrate, the resistance heating element, the insulating covering comprising resin. The copending claims having a more detailed embodiment "anticipates" the broader invention of this application, and while the element wafer has not been recite in the copending application, using the ceramic heater for heating a wafer is well known in the art of its use in the semiconductor industry..

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1, 2, 6, 7, 11, 14, 18-22 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ito et al (US 6,072,162) in view of Yoshida et al (US 6,080,970), and Allen (US 4,057,707) and Sato et al (US 5,587,097).

Ito shows the ceramic heater claimed including an AlN ceramic substrate, a resistant heating element comprising one or more circuits on a surface of the ceramic substrate, the ceramic heater having through holes for accommodating lifting pins to lift a wafer, and a thermocouple. However, Ito does not show the ceramic substrate is a disc-formed and the insulating covering made of oxide glass provided over the heating element.

Yoshida shows that it is known in the art to make a ceramic heater in a disc-shape for heating semiconductor wafers are also made in the disc shape. In view of Yoshida, it would have been obvious to one of ordinary skill in the art to adapt Ito et al with a disc shape ceramic heater to accommodate the disc shape semiconductor wafers to more effectively heat such wafers.

Allen shows a ceramic heater with a ceramic substrate with a heating element provided thereon. Allen further shows that the heating element is insulated with an oxide glassy material to insulate the heating element so as to prevent cracking or peeling of the heating element and to prolong the life of the ceramic heater. Sato shows an insulating material made of glass layer such as borosilicate glass having the thickness of 10 microns to exhibit a good electrical insulation at a

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high voltage. Sato also shows that an insulating glass layer can include lead oxides to increase the surface smoothness of the insulating layer. In view of Allen and Sato, it would have been obvious to one of ordinary skill in the art to adapt Ito with an insulating oxide glass material, with the boron containing borosilicate glass that provides an good electrical insulating layer or with the lead to increase the surface smoothness, to further protect the heating element from cracking or peeling.

5. Claims 30-34, 36 and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ito et al in view of Yoshida et al, and Allen and Sato et al as applied to claims 1, 2, 6, 7, 11, 14, 18-22 and 24 above, and further in view of Martin et al (US 3,978,315) or Bogdanski et al (US 6,150,636).

Ito in view of Yoshida, and Allen and Sato, shows the ceramic heater claimed except providing the resistance heating element on an insulating layer.

Martin shows a ceramic heater having a ceramic substrate with an insulating layer provided on the ceramic substrate with the heating element positioned on the insulating layer. Martin teaches that providing the insulating layer enhances the chemical and physical interactions between the ceramic substrate and the heating element. Bogdanski also shows an insulating layer provided on a ceramic substrate upon which a heating element is disposed thereon (see Figure 30).

In view of Martin or Bogdanski, it would have been obvious to one of ordinary skill in the art to adapt Ito, as modified by Yoshida, and Allen and Sato, with the claimed insulating layer to further increase the mechanical strength of the ceramic heater as well as to protect the

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ceramic heater from undesired chemical interactions between the heating element and the ceramic substrate.

With respect to claim 31, Bogdanski further shows an electrical insulating covering (122) made of an organic resin such as the polyimide resin material to cover and protect the heating element. In view of Bogdanski, it would have been further obvious to one of ordinary skill in the art to use the polyimide as an alternative electrically insulating material to further insulate and protect an electrically conductive heating element.

Response to Arguments

6. Applicant's arguments with respect to claims have been considered but are moot in view of the new ground(s) of rejection.

On page 8 of the applicant's remark, the applicant stated that a terminal disclaimer is filed, but there is no showing of the terminal paper being filed. Thus, the obvious type of the double patenting rejection is still maintained.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sang Y Paik whose telephone number is 571-272-4783. The examiner can normally be reached on M-F (9:00-4:00) First Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robin Evans can be reached on 571-272-4777. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Sang Y Paik
Primary Examiner
Art Unit 3742

syp